

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): Bioreactor for culturing living cells in a liquid medium comprising:

[-] at least one stationary tank enclosing the cells and liquid culture medium, and
[-] at least one means for introducing single large gas bubbles at the a bottom of the vessel,

the single large bubble width from 50 to 99% of the tank width.

Claim 2 (original): Bioreactor according to claim 1 wherein the single large bubble has a volume of at least 65 cm³.

Claim 3 (previously presented): Bioreactor according to claim 1 wherein the bioreactor comprises a means for programming volume and frequency of large bubbles.

Claim 4 (canceled).

Claim 5 (previously presented): Bioreactor according to Claim 1 wherein the stationary tank is surrounded by a rigid outside container.

Claim 6 (previously presented): Bioreactor according to Claim 1 wherein the upper part of the tank is flared.

Claim 7 (previously presented): Bioreactor according to Claim 1 wherein the tank has a cross-sectional shaped selected from the group consisting of cylindrical and oval.

Claim 8 (previously presented): A method for culturing cells selected from the group consisting of plant, animal cells and micro-organisms comprising the steps of using at least one stationary tank enclosing the cells and liquid culture medium, and introducing single large gas bubbles having a width from 50 to 99% of a width of the tank at a bottom of the vessel.

Claim 9 (previously presented): A method for culturing cells and producing biomass cells, embryonic plant cells, metabolites, secondary plant metabolites, and recombinant molecules comprising the steps of using at least one stationary tank enclosing the cells and liquid culture medium, and introducing single large gas bubbles having a width from 50 to 99% of a width of the tank at a bottom of the vessel.

Claim 10 (previously presented): The bioreactor of claim 1 wherein the width of the single large bubble is 60% to 99% of the tank width.

Claims 11-13 (canceled).

Claim 14 (previously presented): Bioreactor for culturing living cells in a liquid medium comprising:

at least one stationary tank enclosing the cells and liquid culture medium, and
an inlet allowing a single large gas bubble to be received at a bottom of the vessel,
the single large bubble having a width that is 50 to 99% of the tank width.

Claim 15 (new): Bioreactor for culturing living cells in a liquid medium comprising:

at least one stationary plastic bag enclosing the cells and liquid culture medium, and
at least one means for introducing single large gas bubbles at a bottom of the vessel, the
single large bubble width from 50 to 99% of the tank width.

Claim 16 (new): Bioreactor for culturing living cells in a liquid medium comprising:

at least one stationary tank enclosing the cells and liquid culture medium, and
at least one means for introducing single large gas bubbles at a bottom of the vessel, the
single large bubble width at least 98.5% of the tank width.

Claim 17 (new): Bioreactor for culturing living cells in a liquid medium comprising:

at least one stationary flexible plastic bag enclosing the cells and liquid culture medium,
and

at least one means for introducing single large gas bubbles at a bottom of the vessel, the single large bubble width from 50 to 99% of the tank width.

Claim 18 (new): Bioreactor for culturing living cells in a liquid medium comprising:

at least one stationary non-flexible plastic bag enclosing the cells and liquid culture medium, and

at least one means for introducing single large gas bubbles at a bottom of the vessel, the single large bubble width from 50 to 99% of the tank width.